

AMENDMENTS TO THE CLAIMS

Please replace all prior versions and listings of the claims with the following amended listing of claims:

1. (currently amended) A method of testing ~~the audio performance of an acoustic device, the acoustic device comprising a microprocessor, a device microphone, a device speaker, and an auxiliary output device each coupled to the microprocessor,~~ the method comprising:

providing a mobile voice-enabled communications device, the device comprising a microprocessor, a microphone connected to the microprocessor, a speaker connected to the microprocessor, and an auxiliary input/output device connected to the microprocessor;

producing a[n] microphone electric audio test signal on an audio generator external to the mobile voice-enabled communications device;

providing the microphone electric audio test signal of the audio generator as [an] input to an external speaker; and

outputting an microphone acoustic audio test signal from the external speaker corresponding to the microphone electric audio test signal;

~~(e) providing~~ receiving the microphone acoustic audio test signal output from the external speaker as [an] input to the device-microphone of the mobile voice-enabled communications device; and

outputting a further microphone electric audio output signal from the microphone of the mobile voice-enabled communications device corresponding to the microphone acoustic audio test signal;

directly routing the further microphone electric audio output signal from the device-microphone to the auxiliary input/output device using the microprocessor; and

outputting the further microphone electric audio output signal from the auxiliary input/output device to an external test system; and

~~(e)-analyzing the further microphone electric audio output signal output from the auxiliary input/output device on the external test system.~~

2. (currently amended) The method of claim 1, wherein the ~~further~~ microphone electric audio output signal output ~~from the auxiliary output device~~ is compared to the microphone electric audio test signal.

3. (currently amended) The method of claim 1, wherein at least one signal characteristic of the ~~further~~ microphone electric audio output signal is compared to a predefined test limit.

4. (currently amended) The method of claim 1, wherein a plurality of characteristics of the ~~further~~ microphone electric audio output signal are compared to predefined test limits for a plurality of audio signal characteristics selected from the group including signal amplitude, frequency response and harmonic distortion.

5. (currently amended) The method of claim 1, including connecting the external speaker to the ~~device~~ microphone of the mobile voice-enabled communications device with a seal prior to the ~~acoustic-microphone electric~~ audio test signal being provided to the external speaker[)].

6. (currently amended) The method of claim 21, wherein the electrical connector is a headset plug through which the ~~further~~ microphone electric audio output signal is output.

7. (currently amended) The method of claim 21, wherein electrical connector is a serial port through which the ~~further~~ microphone electric audio output signal is output.

8. (cancelled)

9. (currently amended) The method of claim 1, wherein the microphone electric audio test signal represents a single tone signal.

10. (currently amended) The method of claim 1, wherein the microphone electric audio test signal represents a multitone signal.

11. (cancelled)

12. (currently amended) The method of claim 1[1], wherein the mobile voice-enabled communications device comprises an RF transceiver connected to the microprocessor and wherein the mobile voice-enabled communications device is ~~acoustic device~~ enabled for two-way wireless data communications.

13. (currently amended) The method of claim 1, ~~wherein the auxiliary output device is an auxiliary input/output device that is coupled to provide electric signals to the device speaker, the method further comprising:~~

producing a speaker ~~test~~ electric audio test signal on the audio generator external to the mobile voice-enabled communications device;

receiving the speaker ~~test~~ electric audio test signal as input to [at] the auxiliary input/output device from the audio generator;

directly routing the speaker ~~test~~ electric audio test signal from the auxiliary input/output device to the ~~device~~ speaker using the microprocessor, ~~and;~~

outputting from the speaker therefrom a ~~device-speaker~~ acoustic audio output signal corresponding to the speaker ~~test~~ electric audio test signal;

providing the ~~device-speaker~~ acoustic audio output signal ~~output~~ from the ~~device-speaker~~ as [an] input to an external microphone; ~~and~~

outputting a device ~~speaker~~ electric audio output signal corresponding to the ~~device~~ speaker acoustic audio output signal from the external microphone to the external test system; and

analyzing the ~~device~~ speaker electric audio output signal output[ted] from the external microphone on the external test system.

14. (currently amended) A method of testing the audio performance ~~of an acoustic device, wherein the acoustic device comprises a microprocessor, a device speaker and an auxiliary input device each coupled to the microprocessor, the method~~

comprising:

providing a mobile voice-enabled communications device, the device comprising a microprocessor, a microphone connected to the microprocessor, a speaker connected to the microprocessor, and an auxiliary input/output device connected to the microprocessor;

~~(a)~~-producing a speaker ~~test~~ electric audio test signal on an audio generator external to the mobile voice-enabled communications device ;

~~(b)~~-providing the speaker ~~test~~-electric audio test signal as [an] input to the auxiliary input/output device from the audio generator;

~~(c)~~-directly routing the speaker ~~test~~ electric audio test signal using the microprocessor of the mobile voice-enabled communications device from the auxiliary input/output device to the ~~device~~ speaker;

~~(d)~~-outputting from the ~~device~~ speaker a ~~device~~ speaker acoustic audio output signal corresponding to the speaker test electric audio signal;

~~(e)~~-providing the ~~device~~ speaker acoustic audio output signal ~~output~~ from the ~~device~~-speaker as an input to an external microphone; ~~and~~

outputting a ~~device~~ speaker electric audio output signal corresponding to the ~~device~~-speaker acoustic audio output signal from the external microphone to an external test system; and

~~(f)~~-analyzing the ~~device~~ speaker electric audio output signal output from the external microphone on the external test system.

15. (currently amended) The method of claim 14, wherein the ~~device~~ speaker electric audio output signal ~~outputted from the auxiliary output device~~ is compared to the speaker ~~test~~ electric audio test signal.

16. (currently amended) The method of claim 14, wherein at least one signal characteristic of the ~~device~~ speaker electric audio output signal is compared to a predefined test limit.

17. (currently amended) The method of claim 14, wherein a plurality of characteristics of the ~~device~~ speaker electric audio output signal are compared to

predefined test limits for a plurality of audio signal characteristics selected from the group including signal amplitude, frequency response and harmonic distortion.

18. (currently amended) The method of claim 22, wherein the electrical connector is a headset plug to which the speaker-~~test~~ electrical audio test signal is provided.

19. (currently amended) The method of claim 22, wherein the electrical connector is a serial port to which the speaker-~~test~~ electric[al] audio test signal is provided.

20. (cancelled)

21. (currently amended) The method of claim 1, wherein the auxiliary input/output device is an electrical connector.

22. (currently amended) The method of claim 14, wherein the auxiliary input/output device is an electrical connector.

23. (currently amended) A system for testing the audio performance of acoustic devices, the system comprising:

an external speaker for receiving a[n] microphone electric audio test signal as input and outputting a[n] microphone acoustic audio test signal representation thereof; and

a mobile voice-enabled communications device, the device comprising a microprocessor, a microphone connected to the microprocessor, a speaker connected to the microprocessor, and an auxiliary input/output device connected to the microprocessor;

the microphone being configured to receive the microphone acoustic audio test signal output from the external speaker as input and output a microphone electric audio output signal corresponding to the microphone acoustic audio test signal;

the microprocessor being configured to:

receive a microphone electric ~~further~~ audio output signal representation

~~of the acoustic audio signal from the device microphone as input; and~~
 directly route the microphone further electric audio output signal to the
 auxiliary input/output device for output therefrom to an external test system
 for analysis

~~an acoustic device comprising a microprocessor, a memory, a device microphone
 for receiving as input an acoustic audio signal output from the external speaker, a
 device speaker, and an auxiliary output device, each of the device microphone,
 device speaker and auxiliary output device being coupled to the microprocessor, the
 memory having data and instructions stored thereon to configure the
 microprocessor to:~~

~~receive a further electric audio signal representation of the acoustic
 audio signal from the device microphone as input; and~~
~~directly route the further electric audio signal to the auxiliary output
 device for output therefrom to an external test system for analysis.~~

24. (currently amended) The system of claim 23, wherein the auxiliary input/output device is an electrical connector.

25. (currently amended) The system of claim 23, wherein the electrical connector is a headset plug ~~through which the further electrical signal is output.~~

26. (currently amended) The system of claim 23, wherein electrical connector is a serial port ~~through which the further electrical signal is output.~~

27. (cancelled)

28. (currently amended) The system of claim 23[27], wherein the mobile voice-enabled communications device comprises an RF transceiver connected to the microprocessor and wherein the mobile voice-enabled communications device ~~acoustic device~~ is enabled for two-way wireless data communications.

29. (currently amended) The system of claim 23, further comprising:

an audio generator coupled to the external speaker for producing the microphone electric audio test signal and providing the microphone electric audio test signal to the external speaker; and

wherein the external test system is an audio analyzer coupled to the auxiliary input/output device for receiving and analyzing the microphone further electric audio output signal.

30. (currently amended) The system of claim 23, further comprising:

~~an external microphone for receiving a acoustic audio signal as input;~~

~~wherein the auxiliary output device is an auxiliary input/output device coupled to further provide electric audio signals to the device speaker;~~

~~wherein the memory having further data and instructions stored thereon to configure the microprocessor to:~~

wherein the microprocessor is configured to:

receive an speaker ~~test~~ electric audio test signal ~~via~~ at the auxiliary input/output device; and

directly route the speaker ~~test~~ electric audio test signal from the auxiliary input/output device to the ~~device~~ speaker;

wherein the ~~device~~ speaker is configured to receive the speaker electric audio test signal and output a device-speaker acoustic audio output signal representation of the speaker-test electric audio test signal for input to the external microphone; and

wherein the external microphone is configured to receive the speaker acoustic audio output signal as input and output[s] a device-speaker electric audio output signal representation thereof for analysis on the [an] external test system.

31. (previously presented) A system for testing the audio performance of acoustic devices, the system comprising:

an external microphone;

a mobile voice-enabled communications device, the device comprising a microprocessor, a microphone connected to the microprocessor, a speaker connected to the microprocessor, and an auxiliary input/output device connected to

the microprocessor;

wherein the microprocessor is configured to:

receive an speaker electric audio test signal via the auxiliary input/output device; and

directly route the speaker electric audio test signal from the auxiliary input/output device to the speaker; and

wherein the speaker is configured to receive the speaker electric audio test signal and output a speaker acoustic audio output signal representation of the speaker electric audio test signal; and

wherein the external microphone is configured to receive the speaker acoustic audio output signal as input and output a speaker electric audio output signal representation thereof for analysis on an external test system

~~an acoustic device comprising a microprocessor, a memory, a device speaker, and an auxiliary input device each coupled to the microprocessor, the memory having data and instructions stored thereon to configure the microprocessor to:~~

~~receive an speaker test electric audio signal at the auxiliary input device; and~~

~~directly route the speaker test electric audio signal from the auxiliary input device to the device speaker for outputting an device speaker acoustic audio signal representation of the speaker test electric audio signal; and~~

~~an external microphone for receiving the device speaker acoustic audio signal from the device speaker as input, and outputting a device speaker electric audio signal representation thereof for analysis on an external test system.~~

32. (currently amended) The system of claim 31, wherein the auxiliary input/output device is an electrical connector.

33. (currently amended) The system of claim 32, wherein the electrical connector is a headset plug-through which the further electrical signal is output.

34. (currently amended) The system of claim 32, wherein electrical connector is a serial port-through which the further electrical signal is output.

35. (cancelled)

36. (currently amended) The system of claim 31[35], wherein the mobile voice-enabled communications device comprises an RF transceiver connected to the microprocessor and wherein the mobile voice-enabled communications device ~~acoustic device~~ is enabled for two-way wireless data communications.

37. (currently amended) The system of claim 31, further comprising:

an audio generator coupled to the auxiliary input/output device for producing the speaker ~~test~~ electric audio test signal and providing the speaker ~~test~~-electric audio test signal to the auxiliary input/output device; and

wherein the external test system is an audio analyzer coupled to the external microphone for receiving and analyzing the ~~device~~ speaker electric audio output signal.